NUTRIENT MANAGEMENT (590) - PRECISION FARMING REQUIREMENTS

Environmental Quality Incentives Program (EQIP) FY 2009

I. **Purpose:** To encourage the adoption of variable rate application of nutrients using Precision Agriculture technologies. The Tennessee Nutrient Management (590) standard will be followed in the application of this practice.

II. **Eligible Land:** Crop land producing annually planted crops.

III. **Ineligible Applicants:**
- Agricultural operations with 2008 EQIP contracts that contain Nutrient Management (590) – Precision Agriculture

''Agricultural operation'' is defined as a ''parcel or parcels of land whether contiguous or noncontiguous, which the producer is listed as the operator or owner/operator in the FSA record system, which is under the effective control of the producer at the time the producer applies for contract, and that is operated by the producer with equipment, labor, management, and production, forestry, or cultivation practices that are substantially separate from other operations.''

IV. **Payment:** Payments will **ONLY** be paid after certification by NRCS that all requirements are met. Producers must demonstrate that nutrient inputs were applied using variable rate technologies.

Payment schedule rates include the following costs for each scenario:

1. **Grid Soil Sampling and Variable Rate Application of Fertilizer and Lime ($18.00/ac)**
   - No greater than 5 acre grid size for soil samples, soil sample analysis, variable rate recommendations, map book and controller files
   - Variable rate application of fertilizer
   - Variable rate application of lime

2. **Electrical Conductivity (EC) Sampling and Variable Rate Application of Fertilizer and Lime ($21.00/ac)**
   - Collection of EC data on maximum 60ft swaths with soil samples taken in determined soil zones of similar soil properties, soil sample analysis, variable rate recommendations, map book, and controller files
   - Variable rate application of fertilizer
   - Variable rate application of lime

3. **Yield Monitoring (GPS), Grid Soil Sampling or EC Sampling, and Variable Rate Application of Fertilizer and Lime ($39.00/ac)**
    - Soil sampling by Grid method or EC method, soil sample analysis, variable rate recommendations, map book, and controller files
    - Yield Monitoring equipment
    - Variable rate application of fertilizer
    - Variable rate application of lime

V. **Payment Limitation:**
    - Maximum payment per scenario
        - Scenario 1 - $5,400
        - Scenario 2 - $6,300
        - Scenario 3 - $11,700
    - Contract limited to **ONLY** one scenario

VI. **Producer requirements for payment:**

- **Recordkeeping and documentation of variable rate application (and yield maps, if utilized) is essential for payment.**

    Soil sampling locations, soil sample analysis, as-applied fertilizer and lime application maps and yield maps are required documentation.

    The following are required documentation to be provided based on the scenario implemented:

    1. **Grid Soil Sampling and Variable Rate Application of Fertilizer and Lime**
        a. Soil sample location maps
        b. Variable rate recommendation maps for each field per 5 acre or less grid.
        c. Maps indicating as-applied rates of fertilizer
        d. Maps indicating as-applied rates of lime

    2. **Electrical Conductivity (EC) Sampling and Variable Rate Application of Fertilizer and Lime**
        a. EC data collection swath maps and soil sample location maps
        b. Variable rate recommendation maps for each field per 5 acre or less grid
        c. Maps indicating as-applied rate of fertilizer
        d. Maps indicating as-applied rate of lime

    3. **Yield Monitoring (GPS), Grid Soil Sampling or EC Sampling, and Variable Rate Application of Fertilizer and Lime**
        a. Soil sample collection maps (Grid or EC)
        b. Variable rate recommendation maps for each field
        c. Maps indicating as-applied rate of fertilizer
        d. Maps indicating as-applied rate of lime

e. Documented use of Yield Maps to determine the variable rate inputs for the following year.

- **A soil test analysis ***must*** be Mehlich I from a certified lab approved by The North American Proficiency Testing Program (Soil Science Society of America).**

    a. Soil test s*amples should be collected on no more than 5 acre maximum units*. Areas of contrasting soils, problem spots or portions of fields where yields are significantly different should be sampled separately provided the area can be fertilized separately. Examples: bottomland, sloping land, and upland

    b. Take the soil samples during the same season (typically fall)

    c. All sample grids or contrasting soil types/zones will be set by GPS points by the EC machine or digitized into a map from GPS readings

    d. Soil test cannot exceed UT fertilizer recommendations

- **Apply fertilizer and lime by soil test recommendations according to realistic yield goals.** Realistic yield goals (average of 3 out of 5 years) will be indicated on the soil sample form and submitted to a soils lab with the sample.

- **Develop a conservation plan on the acres receiving nutrients with the nutrient management as a component.** In most cases there will be other conservation practices included as part of the conservation plan. Other practices needed to bring the land unit into a resource management system must be included in the conservation plan. The nutrient management incentive payment is used to move individuals into a Resource Management Systems (RMS) for cropland. The required planned components are as follows:

    a. Erosion to tolerance “T” levels for the crop rotation(determined by NRCS)
    b. Positive soil conditioning index for the crop rotation (determined by NRCS using RUSLE II)
    c. All blue line streams on a 7.5 minute quad map adjacent to the treated crop fields must be currently established or planned for establishment of a buffer the first year of the contract. (35 ft. min buffer width on cropped sides of the stream) – planned by NRCS
    d. Apply practices needed to mitigate pest management requirements (NRCS Pest Management (595) standard) as determined by the NRCS conservation planner